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# The impact of ‘super clubs’ on uncertainty of outcome in the UEFA women’s champions league

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## ABSTRACT

In the last 15 years, an increasing number of men’s football clubs based in the men’s leagues generating the highest revenue (i.e. Big 5) have started to integrate women’s section into their structure. The emergence of these “super clubs” threatens the long-established financial and sporting inequalities found in European men’s football being replicated in the women’s game. This study examines the measures of outcome uncertainty in the UEFA Women’s Champions League (UWCL) over the 2008–2019 period and how this has been influenced by the presence of “super clubs”. The results indicate a growing trend towards domination by “super clubs”, with outcome uncertainty significantly declining for matches where “super clubs” face other clubs. As indicated in previous research, uncertainty of outcome is necessary in women’s football to maximize spectators’ interest. Therefore, the authors recommend that UEFA should take actions to ensure competitive balance in the UWCL.

## Introduction

Over the last 30 years, European sporting success in men’s football has become increasingly concentrated in the hands of clubs that are based in countries with the largest markets and hence largest revenues (i.e. England, France, Germany, Italy and Spain, hereafter referred as “the Big 5 leagues”).<sup>1</sup> This has come at the expenses of clubs from countries with smaller markets, which, by contrast, noticed diminishing spending power, weaker playing strength and, consequently, limited chances to achieve international sporting success.<sup>2</sup> The widening gaps have sparked discussions among various stakeholders, who have called for changes in revenue distribution models in order to ensure more equitable competition and to encourage outcome uncertainty.<sup>3</sup> On this, the Union of European Football Associations (UEFA) President, Aleksander Čeferin, recognized that competitive balance is one of the principal challenges currently facing European football at both continental and national levels.<sup>4</sup>

In the context of progressively larger investments required to sustain the development of women’s football, over the last 15 years a number of European professional men’s clubs have entered the women’s football market by establishing a link with and/or integrating women’s team into their management and ownership structures.<sup>5</sup> Collaborations between men’s and women’s clubs are often associated with enhanced professionalization, visibility and commercialization of the women’s game.<sup>6</sup> In particular, the recent launch of women’s teams by long-standing men’s clubs

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with considerable international reach such as Juventus (Italy), Real Madrid (Spain) and Manchester United (England) epitomise attempts to raise the profile and commercial value of top-level women's club football in the continent. This is consistent with UEFA's objective to strengthen the visibility and quality of women's football across its member associations and expand the commercial value of its top-level competition, the UEFA Women's Champions League (UWCL).<sup>7</sup>

However, a debate exists on whether the development of women's football should be tied to the men's game. For example, the formation of a hegemony of few elite clubs dominating both men's and women's national league has been observed in Spain, which, as a result, risks undermining competitive balance and outcome uncertainty.<sup>8</sup> In view of this, it is arguable that the entrance of men's football clubs from the Big 5 leagues in women's football risks the long established financial and sporting inequalities found in European men's football being replicated in the women's game. The aim of this paper is to examine whether and how the entrance of women's teams that are associated with men's club from the Big 5 (hereafter referred to as "super clubs") influenced outcome uncertainty in the UWCL over the 2008–2019 period.

The remainder of this paper is organized as follows. The next part reviews the literature on competitive balance and outcome uncertainty, with background information about the UWCL and the emergence of "super clubs" presented in the following section. Next, the employed methodology and data analysis for this study are provided. In the fourth section, findings are displayed and discussed, and practical implications are presented. The final part concludes the article, outlines key limitations and suggests directions for future research.

## Literature review

Competitive balance is one of the main concepts studied in the economics of professional team sports.<sup>9</sup> It postulates that the equilibrium between playing teams is a necessary condition to guarantee outcome uncertainty, and thus generate higher levels of demand and revenue.<sup>10</sup> The empirical literature addressing competitive balance in professional team sports can be divided into two strands.<sup>11</sup> One is concerned with the role of uncertainty of outcome as a determinant of demand for sport competitions.<sup>12</sup> The other one focuses on the analysis of the effects that (changes in) business practices and/or market regulations have on competitive balance.<sup>13</sup>

Three types of outcome uncertainty are identified: match uncertainty (e.g. individual match outcome), seasonal uncertainty (e.g. championship race) and championship uncertainty (e.g. domination of a league by a restricted number of teams over a sustained number of seasons). In the current study, the main focus is on match uncertainty.<sup>14</sup> Empirical analyses at match-level considered outcome uncertainty before kick-off, during a match and at the end of a match. Three past studies have adopted measures of match-level uncertainty in women's football.<sup>15</sup> The first study analysing the effect of *ex ante* uncertainty of outcome was conducted in German women's football. This controlled the difference in league position between the two competing teams to account for match uncertainty. However, as acknowledged by the authors, this "represents a rather rough proxy for match uncertainty in comparison to betting odds".<sup>16</sup> Following this, betting odds were introduced as an objective measure of *ex ante* match outcome uncertainty in the UWCL.<sup>17</sup> A different study compared the competitive profiles of different Spanish football leagues (including women's), employing goal difference between the two competing teams to control for competitive balance at the end of a match, and mean goals per match to account for the degree of openness during a match.<sup>18</sup>

To verify whether and how the entrance of "super clubs" influenced the evolution of match outcome uncertainty in the UWCL, this study focuses on outcome uncertainty before and after the games are played (see Method section for more details). Overall, despite the popular assumption that uncertainty of outcome is important to generate fan demand, empirical evidence remains ambiguous. For example, studies on European men's football have seldom demonstrated convincing evidence to support the uncertainty of outcome.<sup>19</sup> In contrast, results indicate that women's

football fans are attracted by games in which the competing teams are predicted to be of similar strength. Furthermore, it has been observed that the presence of “super clubs” is a positive determinant of fan demand in the women’s game.<sup>20</sup> Therefore, considering the influence that “super clubs” have on outcome uncertainty is of critical interest for stakeholders with responsibility for the strategic development of women’s football.

## **From the UEFA women’s cup to the UEFA women’s champions league**

### ***From 2001 to 2009: the UEFA women’s cup***

In 2000, UEFA approved the creation of a continental-level competition for European women’s clubs: the UEFA Women’s Cup. The format included two qualifying rounds, played in the form of mini-tournaments, followed by quarter-finals, semi-finals and a final played on a home-and-away-basis. Overall, 33 teams took part in the inaugural edition of the competition in 2001/02, while the number of participants gradually increased up to 45 teams by the 2008/09 season. German and Swedish clubs mainly contended the UEFA Women’s Cup in its initial editions, with FFC Frankfurt (Germany) lifting the trophy for the first time in 2002. The club also reached the semi-finals for the second time in the following year. However, Umeå (Sweden) secured the UEFA Women’s Cup in the final against Fortuna Hjørring (Denmark) in the 2002/03 season and then against FFC Frankfurt in 2003/04. In 2004/05, another German club, Turbine Potsdam, won the title facing Djurgården/Älvsjö (Sweden) in the final, while FFC Frankfurt regained the UEFA Women’s Cup back in 2005/06. In 2006/07, both Turbine Potsdam and FFC Frankfurt went out in the semi-finals, and Arsenal (England) became the first club from outside Germany and Sweden to win the UEFA Women’s Cup. Notably, Arsenal also represented the first club associated with professional men’s football side to take part in the final of the competition since its creation. In 2007/08, Umeå and Frankfurt faced each other once again in the final of the UEFA Women’s Cup, with the German club winning the trophy for the third time in their history. In 2008/09, FCR Duisburg (another German club) won the competition against Zvezda Perm (Russia) in the final.

### ***From 2009 to 2020: the UEFA women’s champions league***

The early editions of the UEFA Women’s Cup generated limited returns in terms of commercial appeal and visibility.<sup>21</sup> Hence, in 2009 UEFA decided to align the name of its top-level women’s club competition with that of the men’s counterpart, the UEFA Champions League (CL), rebranding the UEFA Women’s Cup as the UEFA Women’s Champions League. With the inception of the newly revamped UWCL, in 2009/10 the competition started to include more entrants from the top eight nations (the top 12 since 2016/17) on the basis of the UEFA Association Coefficient Rankings and to adopt a format that was more similar to that of the men’s CL. This included a qualifying group stage and four two-legged knock-out stages (32-stage, 16-stage, quarter-finals and semi-finals) before the final (now played in a neutral stadium). Furthermore, UEFA introduced prize money for the first time in 2010, awarding €250,000 to the winners and €200,000 to the runners-up. The following year, UEFA extended the payments to semi-finalists and quarter-finalists, aiming to raise the prestige, the competitiveness and the status of the competition.<sup>22</sup>

Turbine Potsdam won the first edition of the UWCL in 2009/10, while 2010/11 was the first time that a French team, Olympique Lyon (associated with a professional men’s club), triumphed. Lyon repeated its success in 2011/12 and reached the final again in 2012/13. However, Wolfsburg (Germany) – another team associated with a professional men’s team – prevailed against the French side. Remarkably, the 2012/13 final represented the first time in European women’s club football history that both finalists were associated with a professional men’s club. Also, both clubs were from the Big 5 leagues, reflecting the gradually increasing influence of men’s football over the women’s game. Wolfsburg made it to the final again in

2013/14 and beat debutants Tyresö (Sweden), thus lifting the trophy for the second time in a row. The cup remained in Germany in 2014/15 but went back to FFC Frankfurt who, at that time, represented the team with the most wins in the history of the UEFA Women's Cup and the UWCL combined. From 2015/16 to 2019/20, Olympique Lyon achieved the extraordinary record of five UWCL titles in a row. Of particular relevance to the current study is that all clubs that took part in the UWCL finals between 2015/16 and 2019/20 were associated with a professional men's side – Lyon's opponents were Wolfsburg (x3), Paris Saint-Germain and Barcelona.

### **From 2021 onwards: the future of the UEFA women's champions league**

In 2019, UEFA launched its first-ever women's football strategy (#TimeForAction), one objective of which was to strengthen the UWCL's reach and commercial value during the period 2019–2024.<sup>23</sup> Also, in December 2019, UEFA announced two key changes for the UWCL, effective from the 2021/22 season.<sup>24</sup> The first change is a new competition format mirroring that of the men's CL, with a double-round-robin group stage preceding a knockout phase that remains the same as the current structure. This results in a 20% increase in the number of matches. The second change is the establishment of centralized marketing and media rights from the group stage onwards, with UEFA producing every match for both TV and online streaming platforms. This change enables UEFA to give its pan-European women's club tournament increased visibility, more competitive games and more even revenue redistribution. It is important to note is that the new format was developed by UEFA in close collaboration with clubs and the European Club Association (ECA), a key stakeholder representing the interest of 246 professional association football clubs.<sup>25</sup>

## **Method**

### **Sample and variables**

All the matches ( $n = 758$ ) played in the UWCL qualifying rounds (group stage) and knockout phases (32-stage to finals) between 2008/09 and 2018/19 formed the basis of the empirical analysis in this study. This period was selected due to the availability of betting odds for these seasons. Betting odds served to operationalize *ex ante* outcome uncertainty at match-level. This was calculated via the Theil measure for uncertainty.<sup>26</sup> The probabilities of home team's win, away team's win and drawn game were condensed via the Theil index:

$$THEIL = \sum_{i=1}^3 \frac{p_i}{\sum_{i=1}^3 p_i} \log \left( \frac{\sum_{i=1}^3 p_i}{p_i} \right)$$

where  $p_i$  reports the home team's win probability, the away team's win probability, as well as the draw probability of a certain match based on unbiased betting odds provided by *oddsportal.com*. The Theil index increases when the *ex ante* uncertainty of the match outcome is higher and vice versa. In addition, given football is a low-scoring sport, the absolute goal difference between the two competing teams at the end of the match was employed to account for *ex post* uncertainty. The data were collected from *soccerway.com*, a specialized webpage storing historical information for football matches. High values of absolute goal difference in the final scores are interpreted as an indication of low competitive balance and vice versa.

As referred to in the Introduction section, women's teams that are associated with professional men's clubs based in one of the Big 5 leagues are considered "Super clubs". All other women's teams not associated with professional men's club are labelled as "Other", even when these teams are from

**Table 1.** Descriptive statistics (outcome uncertainty by type of game).

	SC v SC			SC v Other			Other v Other		
	Mean (SD)	Min	Max	Mean (SD)	Min	Max	Mean (SD)	Min	Max
Theil	0.86 (0.17)	0.37	1.09	0.70 (0.26)	0.30	1.09	0.76 (0.24)	0.19	1.09
Goal Difference	1.87 (1.83)	0	10	2.86 (2.56)	0	14	2.69 (2.54)	0	21

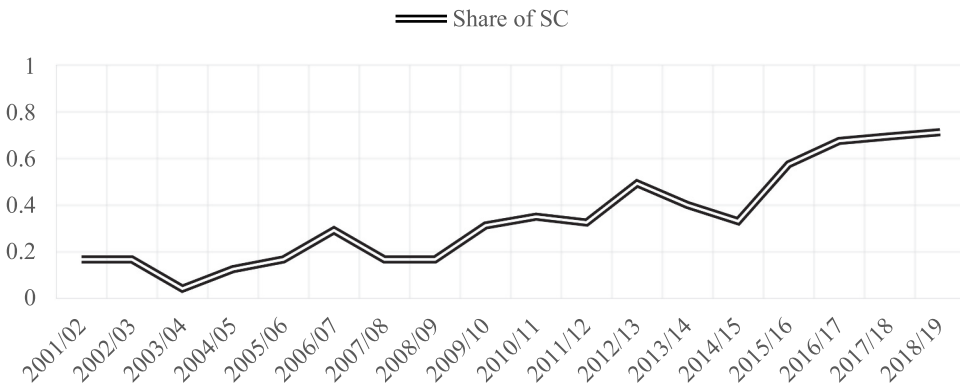
SC = Super club; SD = Standard Deviation.

one of the Big 5 leagues.<sup>27</sup> On this basis, each game was coded following the characteristics of the two competing teams (i.e. “Super club”/“Other”): 1) “Superclub v Super club”; 2) “Super club v Other”; 3) “Other v Other”. Table 1 reports descriptive statistics for *ex ante* and *ex post* outcome uncertainty across types of games.

Based on the simple observation of Table 1, both measures of *ex ante* and *ex post* outcome uncertainty indicate the lowest levels of competitive balance occur for games in which a super club plays against a non-super club. In contrast, the highest levels of competitive balance are reported both before and at the end of a match for games in which a super club faces another super club. However, statistical analysis that distinguishes among explanatory factors is needed to test whether the type of game has a significant effect on measures of outcome uncertainty.

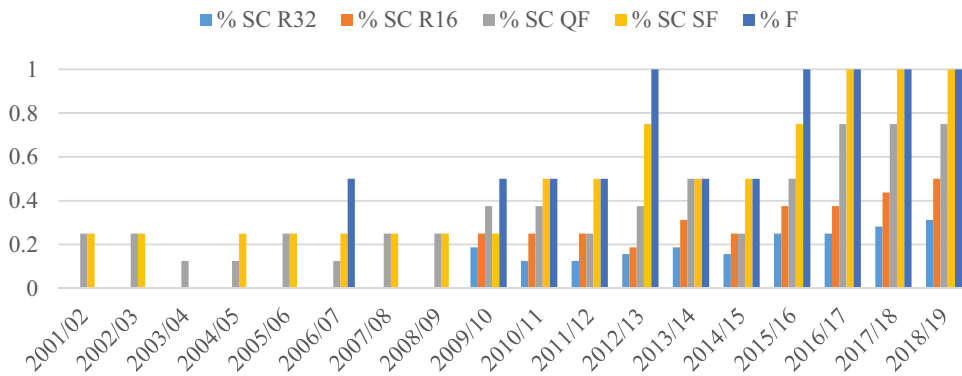
### Data analysis

A regression analysis was conducted to verify whether significant differences exist in the mean levels of outcome uncertainty across types of games. Two dependent variables were considered: *ex ante* outcome uncertainty, measured via the Theil Index; and *ex post* outcome uncertainty, measured via absolute goal difference. Three categories indicating the types of game were converted into dummy variables (0, 1). Types of games represent the main independent variables of interest in this study. However, two additional explanatory factors are included in the analysis. First, the effect of stage of the competition is controlled via dummy variables. This is due to the UWCL including a knock-out phase. Contrary to tournaments that are based exclusively on a round-robin format, it is expected that match-level competitive balance will vary as the competition reaches its final stages because teams that are able to qualify for these games would be expected to have greater playing strength. This is supposed to lead to higher levels of competitive balance. Second, a dummy variable was included for each season considered (2008/09 to 2018/19). In short, the year dummies



**Figure 1.** ‘Super clubs’ participating in first knock-out stage onwards (2001/02–2018/19). SC = Super club. Authors’ own calculations.





**Figure 2.** ‘Super clubs’ reaching the knock-out stage (2001/02–2018/19). SC = Super club; R32 = Round of 32; R16 = Rounds of 16; QF = Quarter-finals; SF = Semi-finals; F = Finals. Authors’ own calculations.

help control for unobserved heterogeneity across time periods and avoid the results of the regression analyses being driven by a particular season. The software used for the analysis was Stata/SE 15.<sup>28</sup>

### Results and discussion

Before exploring the empirical results of this study, **Figures 1 and 2** present the extent to which super clubs participated in the UWCL between 2001/02 and 2018/19.

Overall, **Figure 1** highlights considerable changes in the composition of the competition over time with the share of super clubs in the UWCL increasing from 16% in 2001/02 to 71% in 2018/19. Also, from the observation of the two figures, it is evident that the prevalence of super clubs in women’s football grew following UEFA’s introduction of prize money in 2010. The increased presence of super clubs became particularly noticeable in the final stages of the competition between 2015/16 and 2018/19. Specifically, Barcelona, Olympique Lyon, Paris Saint-Germain and Wolfsburg regularly reached the quarter finals at least during this period. In the same timeframe, only one other club with an integrated structure, but not from the Big 5, Slavia Prague (Czech Republic), achieved a similar result. As such, this reinforces the gradual emergence of a few dominant super clubs in the UWCL.<sup>29</sup>

The results of the regression analyses are reported in **Table 2**. These offer insights into the impact that the entrance of super clubs have had on outcome uncertainty in European women’s football between 2008/09 and 2018/19. More precisely, these indicate significantly lower levels of uncertainty both *ex ante* and *ex post* for ‘Super club v Other’ matches, compared to the two other types of games considered. This suggests that the outcomes of games in which a super club faces a non-super

**Table 2.** Results for uncertainty of outcome across types of games.

	Theil	Goal difference
Super club v Super club	Ref.	Ref.
Super club v Other	-.13 (.03) **	.67 (.36) *
Other v Other	-.00 (.03)	-.14 (.37)
Constant	1.09 (.08) **	.30 (.88)
Seasons dummies	Yes	Yes
Competition stages dummies	Yes	Yes
R <sup>2</sup>	.13	.06
Observations	736	758

\*\* p < 0.001; \* p < 0.10; Standard errors displayed in brackets. Super club v Super club as reference category for type of games dummies. Lower number of observations in the ‘Theil’ model due to unavailability of betting odds for 22 games.



club are significantly more predictable *ex ante* and that these games result in a significantly larger goal difference (i.e. lower uncertainty *ex post*). Thus, the entrance of super clubs in the UWCL has had an impact on the level of competitive balance.

Further examinations of the dataset also indicate that super clubs were considered *ex ante* favourites in 86% of games in which they faced a non-super club (i.e. Super club v Other). In a similar line, when looking at final scores, it is observed that super clubs won 74% of games in which they competed against a non-super club (15% were draws; and 11% were won by non-super clubs). Therefore, the findings of this study follow the argument about the existence of a “drag effect” for women’s clubs that are integrated with men’s club.<sup>30</sup> This is likely to be due to the female sections of these clubs benefitting from the infrastructure and staff of the male counterparts.<sup>31</sup>

The distribution of player talent among contenders is one of the factors contributing to the levels of competitive balance.<sup>32</sup> In the case of women’s football, it is reasonable to suggest that, due to the still low number of participants worldwide, only a limited amount of players are currently able to produce outstanding performances.<sup>33</sup> Therefore, the integration of women’s teams with men’s clubs from the Big 5 leagues enables a scenario in which such teams are able to secure a large concentration of talent through relatively little investment.

The main recommendation for women’s football stakeholders is to consider measures to ensure that the increasing prevalence of super clubs does not further threaten outcome uncertainty in the UWCL. Outcome uncertainty is a key determinant of stadium attendance in the women’s game.<sup>34</sup> However, while integrated clubs can help the women’s game increase its visibility and demand, the results of this study raise critical questions on the positioning of clubs that are either independent or based in smaller market leagues. It is of concern that these clubs might risk weakening their chances to achieve success at the European level as a result of the financial supremacy of integrated clubs from the Big 5.

With the announcement of centralized marketing and media rights from the group stage onwards, UEFA has already put in place some measures to mitigate the problem of competitive balance in the top-level European women’s club football tournament.<sup>35</sup> This can help address the need to improve both accessibility (i.e. number of clubs which benefit) and the total volume of available resources. Importantly, such changes may have consequences on the overall competitiveness of women’s football. Nevertheless, based on the findings of this study, it is important to reflect on the desirability of the revenue distribution system being structured towards supporting smaller teams that have limited access to infrastructure and specialized staff. Furthermore, a long-lasting issue relates to the lack of training compensation mechanisms for female players.<sup>36</sup> The existing system of training compensation was designed by the Fédération Internationale de Football Association (FIFA) with the intention to encourage improved training of young players and creating solidarity among clubs. However, as of January 2021, the FIFA Regulations on the Status and Transfer of Players states that the principles of training compensation shall not apply to the women’s game.<sup>37</sup> This further threatens the financial sustainability of both independent clubs and clubs based in smaller market leagues, with resultant implications on their chances of achieving sporting success.

## Conclusions

The 2021–22 season marks the twentieth anniversary of the top European women’s football competition for clubs, the UEFA Women’s Champions League. In 2001, the competition was initially launched as the UEFA Women’s Cup. Over time, the competition evolved in terms of its format, commercial appeal and team composition. Women’s teams that are associated with men’s club from the Big 5, i.e. super clubs, gradually entered the competition, following the introduction of prize money in 2010. This article examined whether and how the presence of super clubs influenced outcome uncertainty over the 2008–2019 period. Measures of outcome uncertainty at match-level both *ex ante* and *ex post* were analysed

through regression analysis. The findings indicate that the entrance of super clubs significantly affects the level of outcome uncertainty in the UWCL. This implies that the long established financial and sporting inequalities found in European men's football are being replicated in the women's game. Consequently, clubs with no links to men's professional side and/or that are based outside the Big 5 has limited chances to win at the international level, thus risking to disappear under the financial supremacy of super clubs. Yet, competitive balance remains a fundamental component of sporting contests. In particular, outcome uncertainty represents a determinant of fan demand in the women's game. This study raises concerns relating to the emergence of a restricted number of teams dominating women's football competitions. Therefore, to mitigate such concerns, it is important that governing bodies take a co-ordinated approach to support smaller clubs and ensure the balance of the competitions in the women's game.

## Notes

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21. UEFA, 'Women's Champions League launches in 2009'.
22. UEFA, 'UEFA Women's Champions League'.
23. UEFA, '#TimeForAction – Women's football strategy 2019–24'.
24. UEFA, 'New Women's Champions League format with group stage'.
25. In 2019/20, ECA represented 109 ordinary members and 137 associated members. Membership to ECA is granted only to clubs playing in their respective men's top division (an exception is made for the Founding

Members: Manchester United, Chelsea, Real Madrid, Barcelona, Juventus, AC Milan, Olympique Lyon, Bayern Munich, Porto, Ajax, Rangers, Anderlecht, Olympiacos, Copenhagen, Dinamo Zagreb and Birkirkara).

26. See Theil, 'Economics and information theory'. Andreff and Scelles, 'Walter C. Neale 50 years after'; Pawlowski and Anders, 'Stadium attendance in German professional football'; Peel and Thomas, 'The demand for football'.
27. These are also referred as 'non-super clubs' in the paper. However, the label 'others' was chosen for brevity.
28. The regressions include only dummies as explanatory variables. This could be identified as a limitation. However, similar results were found with ANOVAs. Besides, ANOVAs do not control for stage of the competition and year. For these reasons, regressions were chosen over ANOVAs.
29. It is worth noting that in men's football, Barcelona, Paris Saint-Germain and Wolfsburg also appeared amongst the UEFA CL quarterfinalists at least once between 2015/16 and 2018/19, while this was the case for Olympique Lyon in 2019/20. Zambom-Ferraresi, García-Cebrián and Lera-López. 'Competitive balance in male and female leagues'.
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## Disclosure statement

No potential conflict of interest was reported by the authors.

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